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with the schemes of Dragendorff and others. I should suggest that analysis be made of each part of the plant, as of the root, stem, bark, wood, leaf, flower, and seeds; also of the separate organs of plants, *i. e.*, in the flower, of the stamens, pistils, petals, calyx, and of various plants under various conditions of age, climate, soil and seasons. Under these conditions a comparison of chemical constituents with plant structure would lead to a comprehension of the correlation between morphology and chemistry.

BRIEFER ARTICLES.

An interesting Peronospora.—The *Peronospora graminicola* Schr. is abundant here this season on Setaria viridis. Dr. Farlow gives a description of the species in the BOTANICAL GAZETTE, March, 1884, p. 39, after which he says: "This curious species, for which Schroeter has created the sub-genus *Sclerospora*, has been found in several European countries, but is at present only known at La Crosse (Minn.) in this country." The specimens gathered here are more vigorous, seemingly, than those from which the description of the species was made. For example, the conidiophores, instead of being solitary or sparingly branched, are clustered and much branched. But that which will most interest all lovers of the Peronosporæ is the fact that this mildew attacks the spikes of the Setaria and frequently distorts the floral parts beyond all recognition. Herewith is shown[1] a "head" of the foxtail flowers, drawn natural size. Instead of the apparently cylindrical spike, three or more inches long, with its many long bristles, there is a smooth head, or short spike of floral parts, as shown at *a* in the engraving. Rarely more than one head in the same plant is thus deformed. With few exceptions, the essential parts of the affected flowers are either abortive or wanting. At *b* is shown a spikelet double its natural size. The affected floral parts are usually of a purplish color, and abound in the oöspores of the Peronospora. In many of the palets and flowering glumes the thick-walled, dark brown or chestnut oöspores are so numerous as to occupy nearly all the space within the epidermis.

On other culms without flowers the upper leaves are frequently very stiff, upright and colored dark brown. In such the oöspores have formed in countless numbers.—BYRON D. HALSTED, *Agricultural College, Ames, Iowa.*

John Goldie, gardener and botanist.—John Goldie was born near Maybole, in the district of Carrick, Ayrshire, on the 21st March, 1793. Having selected gardening as an occupation, he was for a time under instructions in the art in the gardens of Kilkenam, a residence of the Fergusons, an Ayrshire county family, situated on the Girvan river in Carrick. At an early period of his career he became associated with Mr. James Smith, well known in his day as a botanist and horticulturist, and to whom is credited the introduction into cultivation of what is now known as the Kilmarnock weeping willow, which, it is said, he discovered amongst some of the hedges of Ayrshire.

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[1] See plate VIII.

When Hen Ainslie, the well known American naturalized poet, was a young man making the tour, the fanciful account of which he afterwards published under the title of "A Pilgrimage to the Land of Burns," he visited, amongst other places worthy of note, Mr. Smith's residence and gardens, known by the name of Monkwood Grove, situated on the banks of the classic Doon, and puts on record a very pleasing picture of the place and its occupant and its botanical treasures.

In the year 1815 Mr. Goldie married Margaret Ballantyne Smith, daughter of his preceptor. An incident of his early youth was his appointment as botanist on an exploring party being sent out to Africa by the British government. When preparing himself and in full expectation of going, he was, from some unexplained cause, superseded at the last moment, which he had no cause afterwards to regret, as the expedition turned out abortive, nearly all the members succumbing to the terrible African climate.

For the purpose of more thoroughly studying botany, he became connected with the botanic gardens at Glasgow, and in company with the lamented botanist and traveler Douglas studied botany under Sir William Hooker, who was at that time curator of the gardens, and whose lifelong friendship he afterwards enjoyed.

He paid his first visit to America in 1817-18, and at Montreal made the acquaintance of Frederick Pursh, one of the pioneer botanists of this continent, and at that time residing at Montreal; congeniality of tastes resulting in Mr. Pursh furnishing him with useful letters of introduction to people throughout the country likely to aid him in his researches. Returning home in 1818, he revisited America in 1819-22. His diary, still preserved in manuscript, records his starting on foot from Montreal on the 4th June, 1819, and in this way making the journey up the St. Lawrence, with a divergence to the Lake Simcoe neighborhood, passing through the city of Toronto, at that time called Little York, and along the beach near Hamilton, without observing or being made aware of any nucleus of a city where Hamilton now stands. The Niagara Falls were, of course, a point of special interest, and the diary is illustrated with a pen and ink plan of it. From the falls his course lay through parts of New York and Pennsylvania and through that part of the latter which has since become known as the oil regions. Footing it away out from Pittsburg, the diary dates his arrival at what was called in the locality Oil creek, so named from an oil that was seen to rise to the surface in many places, thick, dark-colored, and having a strong bituminous smell. Some soldiers, marching from Pittsburg to Detroit, were said to be the first to report the discovery of this oil, the virtue of which as a cure for rheumatism they also found out, the march in the wet having made many of them victims to it.

The diary, of course, makes many references to the plants noted in the different localities, and his services to the science were recognized by English botanists in annexing his name to a fern, Aspidium Goldianum, which he was the first to describe and procure specimens of.

On returning to Scotland, after this second American tour, he was in the year 1824 recommended by Mr. McNab, of the Edinburgh Botanical Gardens, to collect and take charge of a vessel load of plants to be taken to St. Petersburg for the starting of a botanical garden there, in which mission he acquitted himself to the satisfaction of his employers. On his return from this expedition he settled down with his family in the nursery business, but returned to Russia again in 1830 and made a collecting excursion through the country, amongst some of the fruits of which was the introduction to the English horticultural world of such plants as the Picea pictita, Pavenia tenuifolia plena, etc. From this time till the year 1844 he followed the business of nurseryman and florist at the old home near by to the birthplace of the poet Burns, a few miles from the town of Ayr.

In 1844, having formed a favorable opinion of Canada West as a place of emigration, in which he might have a chance to better the circumstances of himself and family, he took ship with his entire household, for Montreal, and from there journeyed westward and chose as a resting-place a spot near some of his old-world neighbors, about a mile from Ayr, in the county of Waterloo, where he died, surrounded by children, grandchildren and great-grandchildren, last June, in his ninety-fourth year.

Desmodium molle DC.—This species, heretofore accredited to Florida, seems to be no nearer to us than St. Thomas of West Indies, Panama, and tropical South America. It should be dropped from our catalogues. The plant described under that name with doubt by Chapman, and on that authority entered in Watson's Index, is *D. tortuosum* DC. To it are to be referred *No. 30 Garber's South Florida Fl.*, and *No. 623 Curtiss' N. Am. Pl.* Its more distant verticels of filiform, recurved, thrice longer (9′′) pedicels, and its pendulous loments of 4-6 equal, twisted, 2′′ long, fertile joints, sufficiently distinguish *D. tortuosum* from the following:

D. molle DC.*; ? Macf. Fl. Jam.; Benth. in Fl. Brasil.; Griseb. Fl. Brit. W. Ind.; not Chapm. (No. 361 Eggers' Fl. Ind. Occ.)*—Probably distinct from every other known species by its loment. This is 2- or occasionally 3-jointed; upper joint only perfecting seed, flat, oval,enlarged (3′′ long) and detaching itself at maturity, suture notched at insertion of seed; lower joints minute, undulate-twisted, sterile, persistent.—JOHN DONNELL SMITH.

Testa of the seeds of Phytolacca[1].—Being engaged in a study of Phytolacca, and noticing the paper of Mr. L. H. Pammel on the structure of the testa of several leguminous seeds, published in the *Bulletin of the Torrey Botanical Club*, February, 1886, at Dr. Coulter's suggestion I made an examination of the testa of the seeds of Phytolacca, with the following results: There are four distinct regions: 1. The palisade layer (I). This layer consists of flat very thick-walled cells, each containing a very irregular cell cavity, completely filled with a large granular mass and numerous small granules. The thick walls contain a brown pigment, and are roughened all over by small projec-

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[1] See plate VIII.